- Goal and wishes from Peter
- Goals: need/good to have
- Wishes: nice to have

“Official” goals

- Study phi production to see if it behaves as a double strange or non-strange meson
- Find good estimator to select QGP-like events in small systems
- Search for energy loss in small systems
  - Calibrate method in large systems

Goal: prediction for strangeness vs spherocity

- Big personal LHC lesson:
  - Predicting RHIC -> LHC critical for models
  - After LHC start, postdiction is vague -> wasted opportunity that never comes back
- Angantyr has a new strangeness production framework
  - “Tuned” to ALICE results
  - Can it predict new biased results?
    - We hope to have first internal results after Xmas

Goal: demonstrate that s-enhancement and v2 is correlated

- In both EPOS and Angantyr the underlying physics processes are correlated
  - EPOS QGP core
  - Angantur dense fields
- But how do we demonstrate that they are correlated?
- What could it challenge?
  - Unclear (CGC? Canonical suppression?)

Goal/wish: can we measure the proton initial state distribution (1/2)

- Recent nature result:
  - Nature 557, p 396 (2018): “We find a strong repulsive pressure near the centre of the proton (up to 0.6 femtometres) and a binding pressure at greater distances.”
- Personal opinion: I am not sure I trust the analysis, but I believe the result is correct
- Flow/showing in pp -> map initial state!

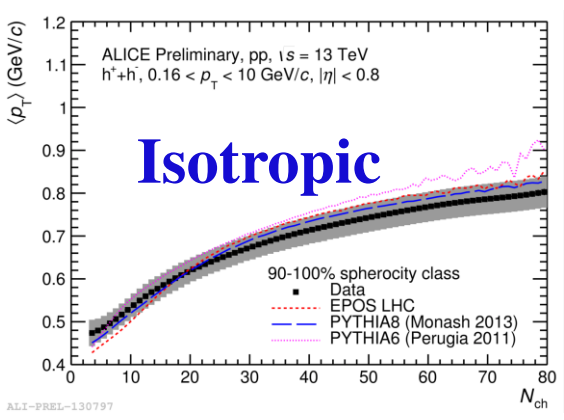
Goal/wish: can we measure the proton initial state distribution (2/2)

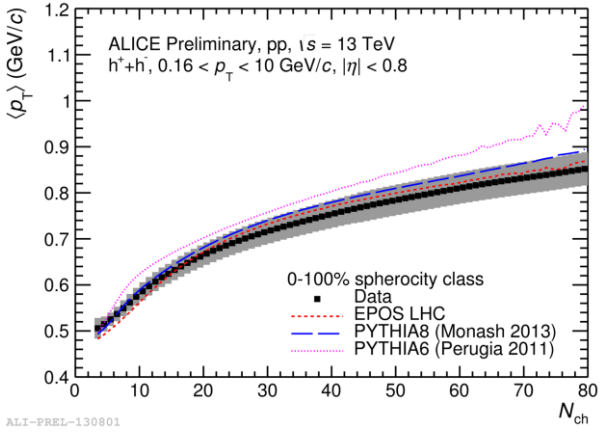
- Some work done already by Alba Soto-Ontoso, Hannah Petersen, Javier L. Albacete, e.g.:
  https://indico.cern.ch/event/656452/contributions/2869844/attachments/1648472/2635468/qm18_ASO.pdf
  But quite simple: I have only seen eccentricities
- We should try to do better
  - Potential for fantastic physics

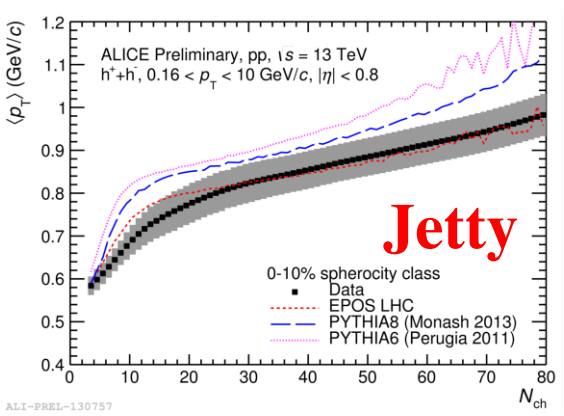
Curiosity driven wishes

Wish: can we understand better what we are tuning to?

- Preliminary transverse spherocity studies suggests that bulk physics is QGP-like
  - In agreement with strangeness suppression results
- Largest difference observed for “jetty” physics, e.g., for <pT> vs Nch







- Are we tuning to the right physics? Is this fair?

Wish: can we learn something about baryons?

- Most new CR models leads to baryon enhancement (e.g. via junctions), which is not observed experimentally
  - Doe this tell us something profound, e.g., that the baryon junction is not important for QCD or are the models to naïve?